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STATISTICAL BULLETIN

METROPOLITAN LIFE INSURANCE COMPANY

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Maternal Mortality Declining

THERE has been a continuous drop in maternal mortality in this country since 1929, and this drop is sure evidence that the campaign to safeguard the lives of mothers against the perils attending pregnancy and childbirth is finally bearing fruit. This campaign has been waged for nearly a quarter of a century, but it is only within the last few years that definite statistical evidence of its progress has become available. The decline has been considerable—about 17 percent in six years. Up to 1929 there was no evidence whatever of progress against the causes of our disgracefully high maternal mortality rate. In 1915 there were 61 deaths of mothers per 10,000 live births in the United States Birth Registration Area; in 1929 there were 70 such deaths; then followed the continuous drop to which we have just referred, culminating in 1935 in a maternal mortality rate of 58 per 10,000 live births—the lowest ever recorded in this country.

An important characteristic of the decline, since 1929, is the fact that it has extended to every broad geographic division of the country. Twenty-one States have reported significant decreases during this period. In 24 States very slight declines were recorded, and in one State there was a very small rise. In the remaining two States data for the full period covered are not available.

Added evidence that headway is being made against maternal mortality is lent by the 47 percent decline, in the last 10 years, in the death rate for diseases associated with pregnancy and childbirth among women insured in the Industrial Department of the Metropolitan Life Insurance Company. The actual number of maternal deaths in proportion to live births, it is true, is not obtainable for this group of women, and the drop in their puerperal death rate has been due, in part, to their declining birth rate whereby fewer women have been exposed to the risk of the puerperium. In this group of insured women, however, as also in the rest of the American population, it is assured that the decline

in the puerperal death rate far exceeds that in the birth rate and that, accordingly, there has been a considerable decrease in the ratio of deaths of mothers to births.

Furthermore, there is good evidence that the declining death rate of mothers is continuing this year; for among these insured women data are available for seven months of 1937 and they show a further decrease of more than 10 percent, up to the end of July, as compared with the corresponding period of 1936—the year which recorded the previous minimal death rate of all time for puerperal diseases. Real effort has been made by the Company to familiarize these insured women with the risks incidental to childbearing, and to acquaint them with the benefits of intensive nursing care during pregnancy, at and after confinement. The combination of instruction and the Visiting Nurse Service of the Metropolitan has brought results. This group of insured women is the largest in the United States for which figures are available concerning the efficacy of certain types of skilled maternity service. Consequently, their experience is especially indicative of the progress which is possible in this field of public health work.

Some of the forces which have been so effective in reducing the death rate among these insured mothers have been operating, if somewhat less strikingly, in the general population. Medical standards have been raised both in private practice and in hospital procedure. Recent investigations have disclosed certain errors of commission and omission in the practice of obstetrics and these are gradually being corrected. Physicians and nurses are being intensively trained for better obstetrical service. The public has profited by the airing of the subject and has learned what type of care is needed for the pregnant woman, and to demand that such care be adequately supplied. Again, through grants of Federal funds to backward States, better-trained personnel and more adequate facilities, such as prenatal clinics and efficiently supervised hospitals, have become available to an increasing proportion of the population of the United States.

The statistics for the different types of puerperal diseases also reflect the favorable results of all this activity. For example, deaths of mothers from puerperal albuminuria and eclampsia have been reduced more than one third in the United States since 1930, while most other causes of maternal deaths, including puerperal septicemia, have declined at least 10 percent. Since most of these gains have been effective against diseases and conditions known to be especially susceptible to amelioration through prenatal care and skilled delivery, it is suggested that they are the direct results of the campaign against maternal mortality.

Automobiles Grave Risk for Aged Pedestrians

So many important phases of the great national motor vehicle accident problem in the United States cry out for solution that it is difficult to single out any one phase as the most appealing. The distressingly large number of victims every year come indiscriminately from all age groups—male and female, white and colored, and urban and rural dwellers.

One aspect of the annual slaughter which has not been given the attention which its seriousness deserves is the heavy toll taken among old people. It is not alone of consequence that 5,500 people annually, or one in every seven killed in automobile accidents, are 65 years of age or older. Impressive though this figure may be it is of even greater import that, in proportion to their numbers, old people contribute far more deaths than do younger persons. For example, among Industrial policyholders of the Metropolitan Life Insurance Company, most of whom reside in cities, 17 boys in every 100,000, between the ages of 1 and 14, are killed in automobile accidents each year; the death rate among men 15 to 64 years is 42 deaths per 100,000, while at ages 65 to 74 the rate rises to the high figure of 103 deaths in every 100,000. The situation is the same among females but the range of rates is much lower—that is, from eight per 100,000 at ages 1 to 14, to 34 per 100,000 for ages 65 to 74.

The explanation for the unfavorable situation of the aged is not hard to find. It lies in their inability to cope with the fast starting and fast moving traffic of today. More than three quarters of the deaths from motor vehicle accidents, among old people in the Metropolitan experience result from accidents in which vehicles strike pedestrians, whereas among persons 15 to 64 years, only one third of the deaths are of this nature. The biggest accident prevention problem in the 15 to 64 year age group obviously is the protection of occupants of automobiles, among whom virtually all the remaining two thirds of the deaths at these ages occur.

Among children who are, if anything, more exposed to the pedestrian hazard than are the aged, the proportion of pedestrian to total deaths is about the same as among the aged. The natural ability of children to adapt themselves to their surroundings, their agility, and their susceptibility to education has kept their death rate per 100,000 down, however, to only a small fraction of the rate for old people. In this connection it is significant that between 1925 and 1936, there has been a decline of 37 percent in the pedestrian death rate for boys and 25 percent for girls, whereas there has been a drop of only 9 percent among aged women and an actual increase of 35 percent among aged men.

AUTOMOBILE ACCIDENTS

Death Rates per 100,000 by Type of Accident, Sex, and Age. Ages 1 to 14, 15 to 64, and 65 to 74 Years. Metropolitan Life Insurance Company, Industrial Department, 1925 and 1936 Compared

Type of Accident; Age Period	Males			Females		
	Death Rates per 100,000		Percent Change 1936 Since 1925	Death Rates per 100,000		Percent Change 1936 Since 1925
	1936	1925		1936	1925	
Ages 1 to 14 Years						
ALL AUTOMOBILE ACCIDENTS	16.9	25.2	— 32.9	8.4	11.0	— 23.6
Primary Automobile Accidents*	16.5	24.7	— 33.2	8.1	10.6	— 23.6
Collision with pedestrian	12.1	19.1	— 36.6	6.3	8.4	— 25.0
Collision with vehicle	3.2	2.3	+ 39.1	1.3	.6	+116.7
Railroad train	.3	.3	‡	.3	.2	+ 50.0
Streetcar	†	.1	§	....	.2	—100.0
Other automobile	.9	.3	+200.0	.7	.2	+250.0
Bicycle	1.4	.7	+100.0	.2	....	§
Motorcycle	....	....	....	....	....	....
Other vehicle	.5	.8	— 37.5	.2	....	§
Collision with fixed object	.2	.2	‡	.2	.1	+100.0
Noncollision accident	.6	1.4	— 57.1	.4	.5	— 20.0
Type of accident not specified	.7	2.2	— 68.2	.3	1.3	— 76.9
Ages 15 to 64 Years						
ALL AUTOMOBILE ACCIDENTS	42.2	27.0	+ 56.3	11.2	8.8	+ 27.3
Primary Automobile Accidents*	39.4	24.3	+ 62.1	10.4	8.0	+ 30.0
Collision with pedestrian	14.7	8.3	+ 77.1	3.9	3.3	+ 18.2
Collision with vehicle	13.6	5.9	+130.5	4.0	1.6	+150.0
Railroad train	2.2	1.7	+ 29.4	.6	.5	+ 20.0
Streetcar	.6	1.0	— 40.0	.2	.2	‡
Other automobile	8.4	2.0	+320.0	3.1	.7	+342.9
Bicycle	1.1	.2	+450.0	†	....	§
Motorcycle	1.0	.6	+ 66.7	.1	†	§
Other vehicle	.2	.4	— 50.0	....	.1	—100.0
Collision with fixed object	6.5	1.8	+261.1	1.1	.3	+266.7
Noncollision accident	6.0	5.8	+ 3.4	1.6	1.8	— 11.1
Type of accident not specified	1.4	5.3	— 73.6	.6	1.8	— 66.7
Ages 65 to 74 Years						
ALL AUTOMOBILE ACCIDENTS	102.7	85.7	+ 19.8	33.7	34.2	— 1.5
Primary Automobile Accidents*	100.8	85.7	+ 17.6	33.2	34.2	— 2.9
Collision with pedestrian	82.6	61.3	+ 34.7	23.6	25.9	— 8.9
Collision with vehicle	8.6	2.8	+207.1	5.7	1.7	+235.3
Railroad train	1.9	....	§	....	....	....
Streetcar	....	....	....	.5	....	§
Other automobile	6.2	2.8	+121.4	5.2	1.3	+300.0
Bicycle	....	....	....	....	....	....
Motorcycle	....	....	....	....	....	....
Other vehicle	.5	....	§	....	.4	—100.0
Collision with fixed object	2.4	1.4	+ 71.4	.8	.4	+100.0
Noncollision accident	4.3	5.6	— 23.2	3.1	2.5	+ 24.0
Type of accident not specified	4.8	14.6	— 67.1	.5	3.8	— 86.8

*Does not include collisions with heavier vehicles (railroad trains and streetcars).
†Less than .05 per 100,000. ‡No change in rate. §Percentage not calculated.

In every large city the predicament of an aged pedestrian caught between traffic at the turn of the light can be witnessed at almost any important street crossing. It is true that old people are many times, perhaps most often, at fault. They are forgetful and easily confused. We must make allowances for their failings. Clearly, the old are very largely dependent for their safety upon the carefulness and courtesy of drivers. We must not confuse them by blowing the horn. We must often curb the impulse to step on the gas the instant the traffic light turns green. Common respect for age demands that we watch for the old with particular care, especially at crossings. The situation we have outlined is a sad commentary on the way we, as drivers of automobiles, have fulfilled our obligation to the aged.

Seasonal Fluctuations in Infant Mortality

RECENT mortality statistics indicate that July and August are now particularly healthful months for infants as compared with the remaining months of the year. This picture contrasts sharply with the situation existing a quarter of a century ago, when July and August were actually the months of the year with maximum infant mortality. In order to portray the changes that have taken place, data for New York State relating to the periods from 1904 to 1908 and from 1931 to 1935 have been taken by way of example. However, the improvement in summer mortality among children under 1 year of age is almost universal in the United States.

For purposes of study, the five-year average of daily deaths for each month have been expressed as percentages of average daily deaths for the corresponding five-year period. From the results, which are shown graphically in the figure on page 6, it will be observed that the change that has taken place from the earlier to the later period is indeed striking. Whereas infant mortality in the months of July and August of the years from 1904 to 1908 was more than 50 percent *greater* than the average for the whole period, in the years from 1931 to 1935 the corresponding figure for the same months was about 15 percent *below* average. This is a direct result of the public health campaign against infantile diarrhea, which formerly was by far the most important cause of death in early infancy. Only one of the other important causes of death in infancy has shown an improvement as marked as that for diarrhea and enteritis.

A few examples may be cited in order to throw further light on the situation. During the years from 1904 to 1908 the infant mortality rate from diarrhea and enteritis in New York State was 42.0 per 1,000 live births; in the period from 1931 to 1935, the rate had dropped to 4.5 per 1,000 live births, a decrease of 89 percent. In the

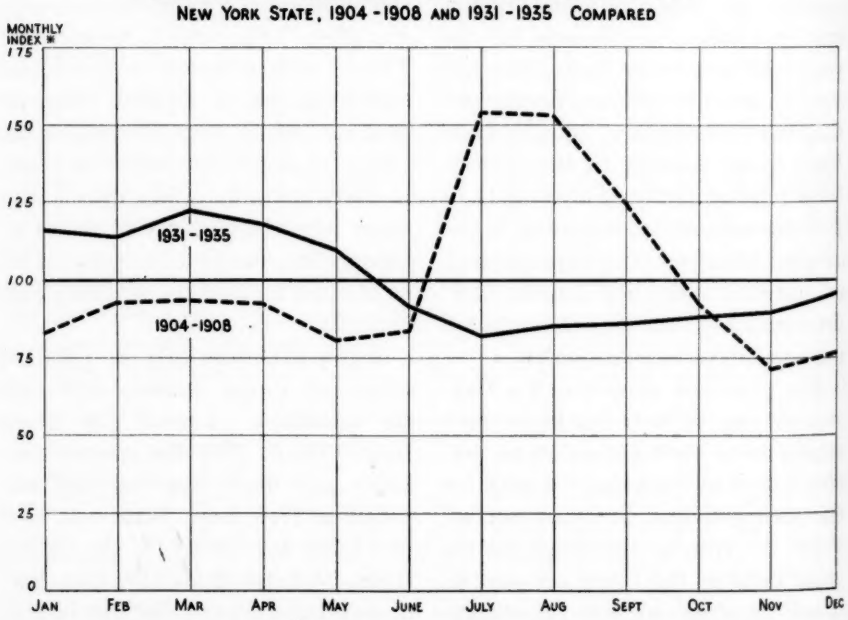
case of congenital debility, the corresponding infant mortality rates were 15.5 and 1.3 per 1,000, a decrease of 92 percent. Other important causes of death which showed decreases were premature birth, 7 percent; bronchitis and bronchopneumonia, 59 percent; whooping cough, 50 percent; and tuberculosis, 84 percent. In view of the rapid decline in the birth rate which has taken place within the last 25 years, such gains in infant mortality become very significant. When fewer babies are born, the community must see to it that fewer babies die.

As a result of the changes in mortality that have been noted, it will be observed in the graph below that more infants now die in March than in any of the remaining months of the year. In that month the death rate among children under age 1 is particularly high from the respiratory diseases, such as influenza, bronchitis, bronchopneumonia, and lobar pneumonia. Other diseases with a high infant mortality incidence in March are measles, whooping cough, and congenital malformations.

Under present conditions of seasonal incidence in mortality, infants under age 1 share a common characteristic with adults of ages 20 and over, namely that the first four months of the year are generally the months with the heaviest death rates. Children and adolescents within the ages from 5 to 20 years suffer their greatest death toll in summer, when they are exposed to

MONTHLY VARIATION IN INFANT MORTALITY

NEW YORK STATE, 1904-1908 AND 1931-1935 COMPARED



* Five-year average of daily deaths in specified month, expressed as percentage of average daily deaths in each 5-year period as a whole.

many accident hazards while playing in the open. It is significant, in this connection, that accidents are the leading cause of death within this range of ages.

Intelligent public health efforts have brought about a remarkable levelling in the course of seasonal mortality among infants under 1 year of age during the last 25 years. However, there is still much to be done. Infantile diarrhea even now causes about one fifth of the total deaths during the summer months among children under age 1. Practically one quarter of the infant deaths in the first four months of the year arise from the respiratory diseases, particularly pneumonia. Every effort possible must be made to combat these unnecessary deaths from preventable causes.

The Longevity of Our Native and Foreign Born

At the International Population Congress held recently in Paris, Dr. Louis I. Dublin presented a paper in which it was shown, on the basis of new life tables, that in our urban communities the foreign-born males have a somewhat better expectation of life than native-born males. Particular significance is lent to this finding by the fact that the foreign-born tend to concentrate in the cities. Statistics show that the urban areas of the Original Registration States (to which the life tables relate) contain 83 percent of the foreign-born but only 66 percent of the native-born, urban areas being here defined as municipalities with 10,000 or more population. It is clear that for fair comparison we must contrast the urban foreign-born with the urban native-born, for it is commonly observed that the mortality in urban areas is less favorable than that in rural areas. Results of computations thus carried out, with due separation of the population into urban and rural residents, are shown in the table on page 8. It will be seen that among urban white males at practically all ages up to 70, the foreign-born have an advantage of about one third of a year in their expectation of life. Urban females do not share in this advantage, the native-born in this case having a somewhat higher expectation of life than the foreign-born, but the advantage in favor of the native-born is seen to be less in urban than in rural areas. In rural sections the advantage is in favor of the native-born, but, as already indicated, the foreign-born are concentrated in the urban districts.

The above facts suggest that the growth of the country's population through immigration has not involved any considerable diminution in the expectation of life for the country as a whole.

Expectation of Life at Specified Ages According to Mortality as of 1930 White Persons by Sex and Nativity and Separately for Urban and Rural Areas of the Original Registration States of 1900, including District of Columbia*

Area; Color; Sex; Nativity	Age									
	0	10	20	30	40	50	60	70	80	90
Native White Males:										
Urban	57.59	53.63	44.58	35.81	27.37	19.77	13.42	8.44	4.89	2.82
Rural	62.42	57.10	48.08	39.65	31.16	23.04	15.65	9.61	5.43	2.82
Foreign White Males:										
Urban	.....	.....	44.89	36.18	27.70	20.06	13.71	8.76	5.08	2.96
Rural	.....	.....	45.25	37.54	29.61	22.05	15.23	9.51	5.46	2.92
Native White Females:										
Urban	61.79	56.88	47.67	38.98	30.47	22.52	15.42	9.69	5.61	3.30
Rural	65.15	59.15	49.98	41.43	32.75	24.34	16.64	10.21	5.68	3.21
Foreign White Females:										
Urban	.....	.....	47.27	38.47	29.79	21.69	14.75	9.41	5.66	3.41
Rural	.....	.....	48.84	40.34	31.80	23.47	15.88	9.68	5.49	3.02

*Life tables were prepared in the Statistical Bureau of the Metropolitan Life Insurance Company. "Urban" area includes municipalities of 10,000 or more inhabitants in 1930.

Health Record for July 1937

As each month of 1937 passes, the prospect grows brighter that the year, at its close, will register the lowest death rate in the history of the American wage-earning population. But whether or not 1937 is destined to break all records for low mortality, it has already surpassed all previous years in another respect, namely, that three successive months —May, June, and July—have registered lower mortality rates than have ever before been recorded for these particular months.

The effect of these extremely favorable health records of late spring and early summer has been to actually reduce the year-to-date death rate, up to the end of July, to 886.4 per 100,000, which is just under the figure for the like part of last year, 888.5. Inasmuch as last year closed with the lowest death rate ever recorded among this large cross-section of the population, it will be readily seen that the 1937 record is indeed very excellent. Furthermore, this record has been made under the handicap of a decidedly bad start; for the mortality during the early winter was unusually high, due to the widespread prevalence of influenza and pneumonia and to the far-above-average death rates for the principal chronic diseases.

A particularly favorable feature of the 1937 health record is the new

minimum death rate established for July, 7.6 per 1,000. This month was featured by a long and widespread heat wave. Whether perhaps, contrary to what happened among this insured group, the heat caused higher than usual July mortality for the country at large, cannot be determined at this time.

Last year closed with no less than eight diseases (typhoid fever, measles, scarlet fever, whooping cough, diphtheria, tuberculosis, chronic nephritis, and puerperal conditions) registering new low death rates. To date, in 1937, five of these (scarlet fever, diphtheria, tuberculosis, chronic nephritis, and puerperal conditions) have cumulative mortality rates even lower than at this time in 1936. Two others (typhoid fever and measles) show substantially no change. Whooping cough is the only one of the eight for which there has been a decided rise in 1937. The rate for this disease, although more than double that for the like part of last year, is still well below the average for the last 10 years.

In earlier numbers of the STATISTICAL BULLETIN, attention has been directed to a decided retardation in the velocity of the downward swing of the tuberculosis mortality rate. The first signs of this appeared last year and they have been even more clear-cut during the current year. In fact, up to the end of July, the cumulative tuberculosis death rate was only 1.3 percent below that recorded during the corresponding months of last year; and even this slight fall has not applied to respiratory tuberculosis, which has actually caused a few more deaths this year than last in the insured wage-earning population. There have been other years, however, when the decrease in the tuberculosis death rate was retarded or actually interrupted, only to be followed by a resumption of a more decided falling tendency than ever. It is thus entirely possible, if low tuberculosis mortalities prevail during the remainder of 1937, that a new low point, well under the previous minimum, will be reached by the end of the year.

The record to date shows more or less pronounced improvement for all of the principal degenerative conditions, except coronary diseases. The drop of more than 7 percent in the chronic nephritis death rate is particularly noteworthy. The mortality from this disease has been declining continuously since 1932. The 1937 record to date for pneumonia is surprisingly good, for, in spite of the high mortality which prevailed last winter, the cumulative death rate for the January to July period was 1.7 percent lower than in the like part of last year.

The outstanding item in the year's record to date is another drop—of more than 10 percent—in deaths from diseases incidental to pregnancy and childbirth. The prospects are very good indeed that for the 10th successive year a new minimal mortality rate for puerperal diseases will be set at the end of 1937.

Other causes of death which have registered lower mortality rates than during the first seven months of 1936 are syphilis, angina pectoris, diarrheal diseases, suicides, and accidents, exclusive of automobile fatalities. The drop in suicides since last year amounts to 3.4 percent. If there is no increase during the rest of the year, 1937 will record the lowest suicide death rate since 1930, together with a continuous drop since 1932.

The causes of death to show noteworthy rises in mortality since last year are influenza, cancer, coronary disease, and automobile fatalities. The increase for the last named is more than 12 percent. The fall months, in which the highest rates from this cause are registered year after year, are still ahead; and it is entirely possible that the death rate, at the end of 1937, will exceed the previous high point (22.0 per 100,000), recorded in 1931.

Reports of the prevalence of sickness throughout the United States show that July made a very favorable record. There was less sickness from diphtheria, influenza, and scarlet fever than in either the previous month of June or in July of last year. The incidence of smallpox, however, continued high for this season of the year, and both poliomyelitis and typhoid fever showed higher prevalence in July than in either the previous month of June or in July 1936.

Reports from 45 states and the District of Columbia show a large increase in poliomyelitis cases, namely, from 209 in June to 1,016 in July. Most of these cases were reported from the South Central States, and there was also an appreciable increase in California.

Items of special public health interest, recently reported, were:

A NATIONAL CANCER INSTITUTE was recently established under the jurisdiction of the United States Public Health Service. The Surgeon General is to head an advisory council which will have general charge of the Institute. The JOHN AND MARY R. MARKLE FOUNDATION, New York, has endowed a grant of $100,000 to the National Research Council for the support of research in endocrinology. The AMERICAN HUMAN SERUM ASSOCIATION was recently organized in Philadelphia, by a group of persons interested in convalescent serum. The BOSTON DISPENSARY has been pledged $300,000 to complete the building of its Diagnostic Hospital and finance its operation. A Medical Center will be established for rural physicians of New England.

The following table shows the mortality among Industrial policyholders for July 1937, June 1937, and July 1936, together with the cumulative rates for the first seven months of each year.

METROPOLITAN LIFE INSURANCE COMPANY

Death Rates per 100,000 for Principal Causes. Weekly Premium-Paying Business in Industrial Department. All Ages (Annual Basis)*

MONTHS OF JULY 1937, JUNE 1937, AND JULY 1936.

CAUSES OF DEATH	ANNUAL RATE PER 100,000 LIVES EXPOSED*				
	July 1937	June 1937	July 1936	Cumulative January-July 1937	Cumulative January-July 1936
TOTAL—ALL CAUSES	764.8	782.4	810.7	886.4	888.5
Typhoid fever	.9	1.0	.7	.7	.6
Measles	1.2	1.9	1.1	1.4	1.3
Scarlet fever	1.2	1.5	1.7	2.0	2.8
Whooping cough	4.4	3.7	1.3	3.3	1.5
Diphtheria	1.3	.8	1.0	1.7	1.8
Influenza	3.0	6.4	3.6	26.5	19.7
Tuberculosis (all forms)	54.6	52.1	52.3	55.1	55.8
Tuberculosis of respiratory system	48.8	45.9	46.2	49.5	49.3
Syphilis, locomotor ataxia, and general paralysis of the insane	9.3	10.9	12.0	11.3	12.2
Cancer (all forms)	92.1	87.8	87.3	93.7	90.5
Diabetes mellitus	20.5	22.7	19.0	26.5	25.8
Cerebral hemorrhage; apoplexy	56.5	55.5	60.7	61.7	65.5
Diseases of the heart†	136.4	149.4	157.6	168.8	170.4
Diseases of the coronary arteries	27.7	27.3	21.7	30.9	25.6
Angina pectoris	5.3	6.4	7.5	8.2	9.0
Pneumonia (all forms)	31.8	46.6	38.6	85.2	86.7
Diarrhea and enteritis	12.3	6.9	10.6	6.6	6.9
Appendicitis	11.7	10.6	13.8	11.2	11.2
Chronic nephritis (Bright's disease)	50.9	53.5	54.8	57.9	62.3
Puerperal state—total	7.1	6.4	7.2	7.0	7.8
Suicides	7.6	8.9	9.1	8.6	8.9
Homicides	5.0	4.9	5.7	5.0	4.7
Accidents—total	65.3	55.8	78.1	52.7	55.0
Automobile accidents	20.7	19.8	20.5	19.4	17.3
All other diseases and conditions	158.8	161.4	165.4	160.5	162.6

*The rates for 1937 are subject to slight correction, since they are based on provisional estimates of lives exposed to risk.

†Excludes pericarditis, acute endocarditis, acute myocarditis, and angina pectoris.

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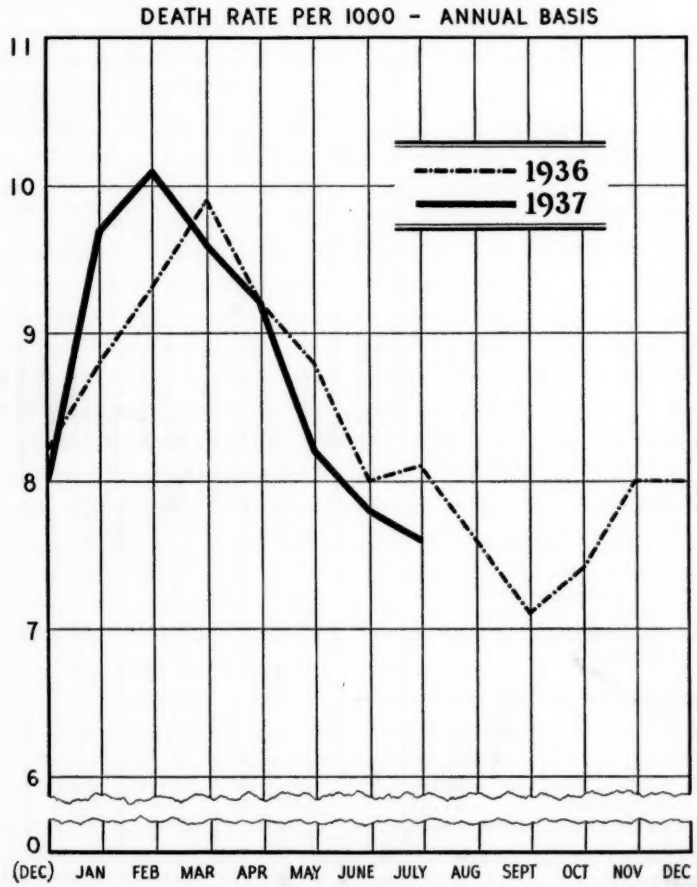
DEATH RATES FROM ALL CAUSES

METROPOLITAN LIFE INSURANCE CO. – INDUSTRIAL DEP'T.
WEEKLY PREMIUM-PAYING BUSINESS – TOTAL PERSONS



1936	8.8	9.3	9.9	9.2	8.8	8.0	8.1	7.6	7.1	7.4	8.0	8.0
1937	9.7	10.1	9.6	9.2	8.2	7.8	7.6					

Rates are provisional for 1937

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